Exercise 1 *The temperature T in degrees Fahrenheit t hours after 6 AM is given by:*

$$-\frac{1}{2}t^2 + 8t + 32,$$

for $0 \leq t \leq 12$.

(a) $T(4) =$ $\boxed{56}^\circ F$. *This is the temperature at*

Multiple Choice:

(i) *4AM.*
(ii) *10AM.* ✓
(iii) *4PM.*
(iv) *10PM.*

(b) *The average rate of change of T over the interval $[4, 8]$ is* $\boxed{2}$.

(c) *The average rate of change of T from $t = 8$ to $t = 12$ is* $\boxed{-2}$.

(d) *The average rate of temperature change between 10 AM and 6 PM is* $\boxed{0}$.

(e) *The units for the rates above are*

Multiple Choice:

(i) *degrees Fahrenheit.*
(ii) *degrees Celsius.*
(iii) *degrees Celsius per hour.*
(iv) *degrees Celsius per minute.*
(v) *degrees Fahrenheit per hour.* ✓
(vi) *degrees Fahrenheit per minute.*